ABSTRACT

Methods and systems for operating automotive computing devices are described. In one embodiment, a small amount of static RAM (SRAM) is incorporated into an automotive computing device. The SRAM is battery-backed to provide a non-volatile memory space in which critical data can be maintained in the event of a power loss. Circuitry is provided to ensure that the SRAM receives back up power from the battery at the appropriate time. Software manages the SRAM and the other storage assembly components and makes use of virtual paging or virtual addressing techniques to keep track of where various pages, including object store pages, are stored in the system. The software knows exactly where all of the object store pages are stored so that in the event of a power loss, the page locations are known and hence the pages can be used when power is restored. The SRAM is advantageously used to maintain so-called "dirty pages" or pages that have been written to so that these pages are not lost in the event of a power interruption. Additionally, the software can also provide an orderly means by which pages in the SRAM can be written out to flash memory thereby avoiding unnecessary flash write operations which, in turn, increases the lifetime of the flash memory.